MAR 15 1990

FLOOD INSURANCE STUDY

PIKE COUNTY, KENTUCKY

UNINCORPORATED AREAS

VOLUME 1 OF 2

FEBRUARY 16, 1990

Federal Emergency Management Agency

COMMUNITY NUMBER - 210298

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

This publication incorporates revisions to the original Flood Insurance Study. These revisions are presented in Section 9.0.

TABLE OF CONTENTS

Table of Contents - Volume 1

		Page
1.0	INTRODUCTION	1
	1.1 Purpose of Study	1
	1.2 Authority and Acknowledgments	1
	1.3 Coordination	1
2.0	AREA STUDIED	2
	2.1 Scope of Study	2
	2.2 Community Description	4
	2.3 Principal Flood Problems	6
	2.4 Flood Protection Measures	6
3.0	ENGINEERING METHODS	7
	3.1 Hydrologic Analyses	7
	3.2 Hydraulic Analyses	8
4.0	FLOOD PLAIN MANAGEMENT APPLICATIONS	14
	4.1 Flood Boundaries	14
	4.2 Floodways	14
5.0	INSURANCE APPLICATION	15
	5.1 Reach Determinations	42
	5.2 Flood Hazard Factors	42
	5.3 Flood Insurance Zones	42
	5.4 Flood Insurance Rate Map Description	43
6.0	OTHER STUDIES	43
7.0	LOCATION OF DATA	48
8.0	REFERENCES AND BIBLIOGRAPHY	48

TABLE OF CONTENTS - Volume 1 (continued)

			Page
9.0	REVISIONS DESCRIPTION		50
9.1	First Revision (Revised February 16, 1990)		50
a.	Acknowledgments		50
b.	Scope		50
c.	Hydrologic and Hydraulic Analyses		50
d.	Floodways		51
e.	Other Studies		51
f.	References and Bibliography		51

FIGURES

Figure	1	-	Vicinity Map	3
Figure	2	-	Floodway Schematic	15

TABLES

Table	1	-	Summary of Discharges	9
Table	2	-	Range of Roughness Coefficients	13
Table	3	-	Floodway Data	16
Table	4	-	Flood Insurance Zone Data	44
Table	5	-	Revised Summary of Discharges	50

EXHIBITS

Flood Profiles

Ratliff Creek	Panels 01P-06P
Shelby Creek	Panels 07P-18P
Marrowbone Creek	Panels 19P-26P
Johns Creek	Panels 27P-28P
Raccoon Creek	Panels 29P-30P
Big Creek	Panels 31P-33P
Pond Creek	Panels 34P-38P
Blackberry Creek	Panels 39P-43P
Peter Creek	Panels 44P-46P
Right Fork Peter Creek	Panel 47P
Left Fork Peter Creek	Panels 48P-51P
Zebulon Tributary	Panel 52P
Brushy Branch	Panels 53P-55P
Ashcamp Branch	Panels 56P-69P
Levisa Fork	Panels 70P-74P
Russell Fork	Panels 75P-82P
Burning Fork	Panels 83P-85P
Tug Fork	Panels 86P-94P

Flood Boundary and Floodway Map Index
Flood Boundary and Floodway Map

Flood Insurance Rate Map Index
Flood Insurance Rate Map

FLOOD INSURANCE STUDY

PIKE COUNTY,
UNINCORPORATED AREAS,
KENTUCKY

1.0 INTRODUCTION

1.1 Purpose of Study

The purpose of this Type 19 Flood Insurance Study is to investigate the existence and severity of flood hazards in the Unincorporated Areas of Pike County, Kentucky, and to aid in the administration of the Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. Initial use of this information will be to revise Flood Insurance Rate Maps developed from data presented in the Type 15 Flood Insurance Study. Further use of the information will be made by local regional planners in their efforts to promote sound land use and flood plain management. Minimum flood plain management requirements for participation in the National Flood Insurance Program are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgements

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this Type 19 Flood Insurance Study were performed by the U.S. Army Corps of Engineers (COE), Huntington District, (the Study Contractor) for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. IAA-H-9-79, Project Order No. 26, Amendments 1, 2, and 4. This study was completed in January 1982.

Assistance in hydraulics, mapping, and report preparation was provided by the COE, Wilmington (North Carolina) District.

1.3 Coordination

On December 7, 1978, an Initial Coordination Meeting was held in the Pike County Courthouse at Pikeville with representatives of FEMA (formerly the Federal Insurance Administration), the State of Kentucky, Pike County, and the COE in attendance. At this meeting, the nature and purpose of the Flood Insurance Study were explained. The methodology to be used in the study and the floodway concept were discussed. An announcement of the initiation of the study and a request for flooding information were published in local newspapers at the outset of the study.

On March 15, 1984, the results of this Flood Insurance Study were reviewed and accepted at a final coordination meeting attended by representatives of the Study Contractor, FEMA, and the community.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the unincorporated areas of Pike County, Kentucky. The area of study is shown on the Vicinity Map (Figure 1). The incorporated areas within the county were excluded from this study.

The limits of the detailed and approximate studies to be performed were determined by FEMA with community and Study Contractor consultation at the Initial Coordination Meeting in December 1978.

The flooding sources studied by detailed methods are listed below:

a. Ratliff Creek, from the mouth at Levisa Fork to about 3.05 miles upstream of the mouth;

b. Shelby Creek, from the mouth at Levisa Fork to about 2.26 miles upstream of Dorton Creek Road;

c. Marrowbone Creek, from the mouth at Russell Fork to about 0.05 mile upstream of the confluence of Brushy Branch;

d. Johns Creek, from about 0.39 mile downstream of the confluence of Raccoon Creek to 2.68 miles upstream of the confluence of Raccoon Creek;

e. Raccoon Creek, from the mouth at Johns Creek to the confluence of Burning Fork;

f. Big Creek, from the mouth at Tug Fork to about 0.07 mile upstream of Road Fork Road;

g. Pond Creek, from the mouth at Tug Fork to just upstream of State Route 1056;

h. Blackberry Creek, from the mouth at Tug Fork to about 0.01 mile upstream of Blue Spring Branch Road;

i. Peter Creek, from the mouth at Tug Fork to the confluences of Right and Left Forks Peter Creek;

j. Right Fork Peter Creek, from the mouth to about 0.34 mile upstream of the Norfolk Southern Railway;

k. Left Fork Peter Creek, from the mouth to about 1.24 miles upstream of Beech Creek Road;

l. Zebulon Tributary, from the mouth at Burning Fork to about 0.03 mile upstream of U.S. Route 119;

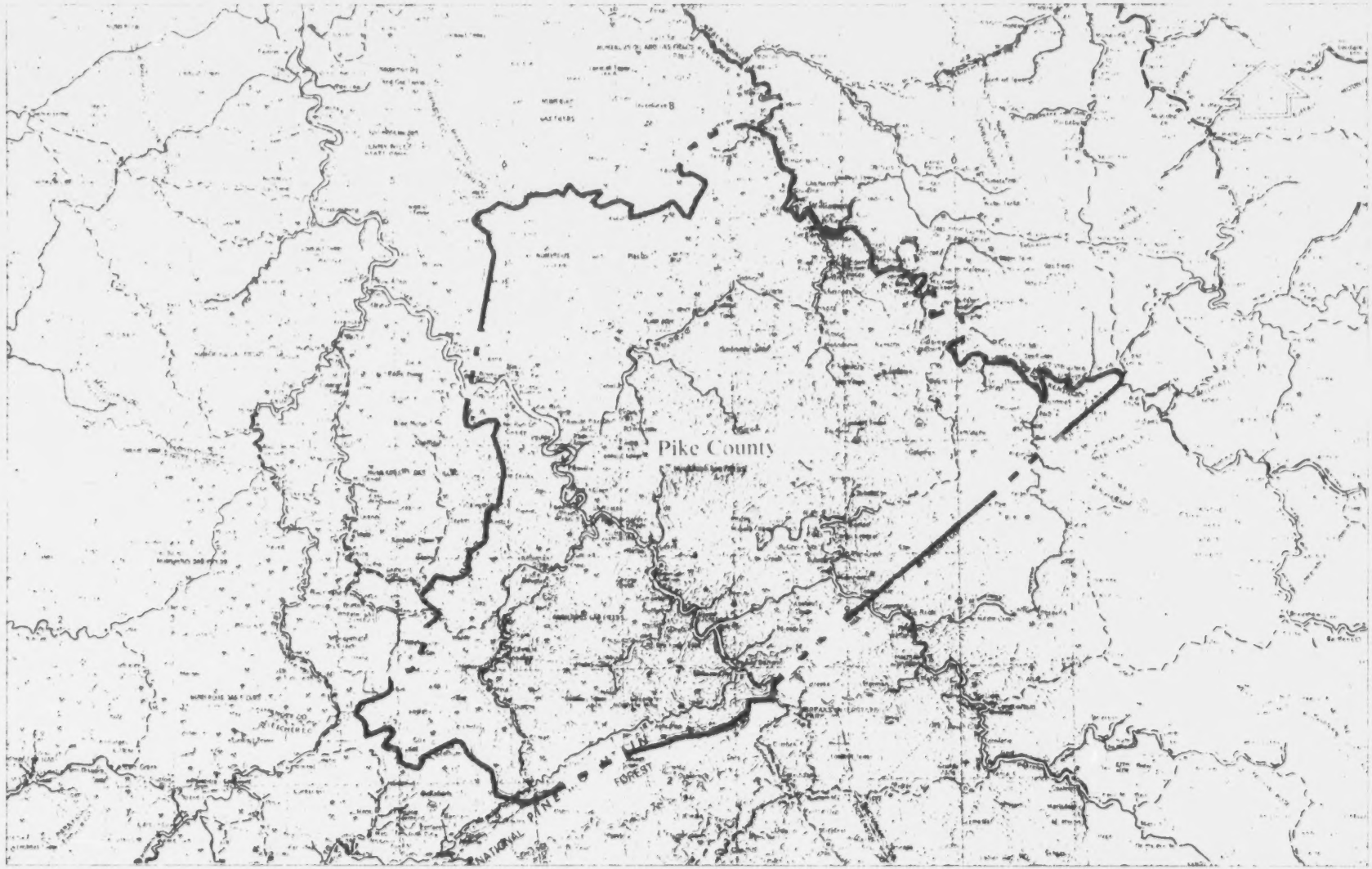

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

APPROXIMATE SCALE

8 0 8 16 24 MILES

VICINITY MAP

m. Brushy Branch, from the mouth at Marrowbone Creek to about 0.61 mile upstream of the mouth;

n. Ashcamp Branch, from the mouth at Elkhorn Creek to about 0.19 mile upstream of Ashcamp Branch Road;

o. Levisa Fork, from the Floyd County - Pike County boundary to about 2.75 miles upstream of Russell Fork Road;

p. Russell Fork, from the mouth at Levisa Fork to the Kentucky State boundary;

q. Burning Fork, from the mouth at Raccoon Creek to the confluence of Zebulon Tributary; and,

r. Tug Fork, within the county boundaries.

The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development or proposed construction through January 1987. The total mileage for these streams is 167.3 miles.

Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to and agreed upon by FEMA and Pike County. Approximate flooding delineations were taken from the Type 15 Flood Insurance Study.

2.2 Community Description

Pike County is the easternmost county in Kentucky, bordered by West Virginia to the northeast and Virginia to the southeast. Due to the economic prosperity associated with coal production, the county population grew from 49,677 in 1920 to 81,154 in 1950. Between 1950 and 1970, the population declined 25 percent to 61,059 as mechanization and a shift in demand from coal to oil reduced employment. Between 1970 and 1980, the population increased 33 percent to 81,123 (Reference 1) as higher coal production made more jobs available. Ninety percent of the population (72,869) resides in the unincorporated areas.

Pike County was formed in 1821 and named in honor of General Zebulon M. Pike. The county seat was established opposite the mouth of Lower Chloe Creek and was called Piketon (later Pikeville).

Pike County lies in the Big Sandy River Basin, one of the major tributaries of the Ohio River. Levisa Fork of Big Sandy River flows through the county in a northwesterly direction and drains the central and western portions. Tug Fork of Big Sandy River forms the eastern boundary with Mingo County, West Virginia. Russell Fork, a major tributary of Levisa Fork, lies in the southern part of the county. Flood stages on Levisa Fork are modified by Fishtrap Lake in southern Pike County, J.W. Flanagan Lake on the Pound River, and North Fork of Pound Lake.

Pike County lies in a rugged portion of the Appalachian Plateau, characterized by sharp ridges and narrow valleys. The terrain is maturely dissected and unglaciated. Streams are often entrenched in the lower basins. Elevations range from less than 700 feet to over 1,800 feet above sea level and the drainage patterns are intricate. Cliffs are common, and steep gradients of greater than 40 percent slope cover 90 percent of Pike County. The rugged terrain of the area has, for the most part, discouraged settlement and development at river headwaters and precluded the development of a sustained agricultural base. Only a small percentage of the land in Pike County is in pasture and crops. Coal mining has dominated the economy of the study area for many years. Transportation systems, small industry, and human habitations are located mostly in the narrow valley areas. Manufacturing is of slight importance.

There is a shortage of level land suitable for development in the county because of the steep slopes and narrow valleys. Most land suitable for construction is either restricted by coal rights or inflated in price because of scarcity and high demand. Housing, therefore, is often situated in the flood plain, on steep slopes, or in other inappropriate locations.

From 1970 to 1980, the number of housing units in the county increased 51 percent, from 18,699 to 28,183, nearly twice the state increase of 29 percent. About 90 percent, or 24,947 units, are located in unincorporated areas. The median value of housing units in 1980 was $25,700, up 345 percent from the 1970 prices of $5,900. Vacancy rates in 1980 amounted to 0.7 percent for owner-occupied units and 9.9 percent for rental units. The population per occupied unit amounts to 3.3 persons (Reference 1).

The county's greatest asset is its rich deposits of high-grade bituminous coal. Based on 1978 figures from the U.S. Department of Mines, the demonstrated reserve base is estimated at 2,674.8 million tons. Total recoverable coal is estimated at 835.9 million tons, with underground recoverable coal estimated at 553.3 million tons, and surface recoverable coal at 272.6 million tons. County production, which experienced declines in the 1950s and early 1960s, increased through the 1960s and fluctuated during the 1970s, reached its highest production year in 1980 when 25.2 million tons were produced. Underground production in 1980 accounted for 22.3 million tons (88 percent) and surface mining, 2.9 million tons (12 percent). Almost 19,000 acres of land have been disturbed by surface mining in Pike County since 1954.

The general area is characterized by a mixture of northern and southern tree species, some of which represent disjunct hardwood communities with several codominant trees. Since the virgin forest has been cut for lumber or cleared by fire, 85 percent of Pike County is covered with secondary or tertiary forest growth. With a decreasing agricultural base, colonizing species have increased and no major endangered plant species have been reported along Tug or Levisa Forks.

The climate of Pike County is humid mesothermal, with considerable fluctuations in daily, monthly, and annual temperatures and precipitation. Average temperatures range from 37 degrees Fahrenheit (F.) in January to 76 degrees F. in July and August, with a mean of about 56 degrees F. The average annual precipitation is 41 inches of rain and 16 inches of snow (Reference 2).

2.3 Principal Flood Problems

The towns and villages of Pike County are comparatively small and mostly located along the main streams. Most flood damage occurs at isolated pockets of development.

The history of flooding along the rivers and streams in Pike County indicates that flooding could occur during any season of the year. Large frontal storms or decaying tropical storms produce the worst flooding along the larger rivers and stream systems. Summer-type storms have occurred over small areas producing severe local floods without affecting adjacent areas. The mountainous topography of the basin is conducive to rapid concentration of runoff, resulting in fast rises of the streams, best described as "flash flooding." This condition has been aggravated by widespread timbering, strip mining, and other operations which remove forest and ground cover. Floods are of short duration, seldom remaining above the flood stage for more than 24 hours.

Major flood events in Pike County occurred in 1862, 1875, 1899, 1901, 1908, 1913, 1918, 1929, 1937, 1939, 1955, 1957, 1963, and 1977. The maximum flood of record on Levisa Fork occurred in January 1957 and had a stage of 54 feet at the USGS gage at Pikeville. The March 1963 flood had a stage of 51.2 feet at the gage. The most recent flood occurred in April 1977 and reached a stage of 52.8 feet. Fishtrap Dam provided an estimated 10-12 feet of stage reduction during the 1977 flood, which approximated the 500-year frequency event. The 1977 flood was the maximum flood of record on Russell Fork and approximated the 100-year event.

The April 1977 flood was also the maximum flood of record on Tug Fork, and crested at 52.56 feet at the USGS gage at Williamson, West Virginia. This flood was 25.5 feet above flood stage, had a discharge of 94,000 cubic feet per second (cfs), and approximated the 500-year frequency event. The second largest flood on Tug Fork, that of March 1963, crested at the Williamson gage at 44.5 feet, about 0.9 feet higher than the flood of January 1957. The February 1862 flood and the July 1875 flood crested at approximately 42.2 feet and 43.2 feet, respectively.

Major floods have caused damage to buildings, highways, railroads, and utilities. Flash floods occur without sufficient warning to permit removal of business stocks and equipment, house furnishings, and in many cases, automobiles, to above flood level. Coal washing wastes piled along the main and tributary streams during normal operations wash into the streams, with the finer materials being mixed with silt and sand and deposited in buildings, streets, and yards, thereby presenting difficult and expensive cleanup problems after floods. Principal means of access in the valleys are inundated or damaged, paralyzing business activities in some areas not otherwise affected.

2.4 Flood Protection Measures

Two large multipurpose reservoirs provide considerable flood protection in the Levisa Fork basin in Pike County. Fishtrap Lake on Levisa Fork, approximately 16 miles above Pikeville, was authorized by the Flood Control Act of 1938 (P.L. 75-761). The dam was completed in 1969 and controls

runoff from a drainage area of 392 square miles. J.W. Flanagan Lake on the Pound River, a tributary of Russell Fork of Levisa Fork, is about 2 miles above the mouth of the Pound River and 123 miles above the mouth of Levisa Fork. It was authorized by the Flood Control Act of 1938 and the Federal Water Pollution Control Act Amendments of 1961 (P.L. 87-88). The dam was completed in 1963 and controls runoff from 221 square miles. These lakes are operated for flood control, low flow augmentation, fish and wildlife conservation, and recreation. A similar multipurpose reservoir located on North Fork of the Pound River and upstream of J.W. Flanagan Lake and Pound, Virginia, operates as a system with J.W. Flanagan Lake for downstream floodflow reduction. As a result of these projects, flood stages are reduced considerably on Russell Fork and Levisa Fork in Pike County.

The Pikeville "Model City" project involved the relocation of Levisa Fork through Peach Orchard Mountain west of the city. Upon completion of the new channel, the old channel was partially backfilled to prevent headwater flooding and form a lake. The essential parts of the project were completed in 1981.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for flood plain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1 percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each flooding source studied in detail affecting the community.

Natural discharge-frequency curves used in this study were developed from gage data on a regional basis in accordance with the method outlined in "Statistical Methods in Hydrology" by Leo R. Beard, dated January 1962 (Reference 3) and U.S. Water Resources Council Bulletin No. 17, dated March 1976 (Reference 4).

Floodflow frequency analyses utilized the computer program "Flood Flow Frequency Analysis, Preliminary," October 1976 (Reference 5). Twenty U.S. Geological Survey (USGS) stream gaging stations in the surrounding drainage basin displaying similar hydrologic characteristics were used in the regional analysis. Two of these stations are located on Levisa Fork at Pikeville and Russell Fork at Elkhorn City. Periods of record range from 16 to 70 years and represent drainage areas of 31 to 3,892 square miles (References 6 and 7). An "n" value of 60 years was adopted as being representative and was used in computing the expected frequency for each evaluation center. Discharges on Levisa Fork and Russell Fork were modified by a routing procedure to account for the flood control effects of Flanagan and Fishtrap Lakes. Discharges for Levisa Fork decrease going downstream due to the reservoir effects and overbank storage.

Peak discharges for the 10-, 50-, 100-, and 500-year floods of each flooding source studied in detail in the community are shown in Table 1.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of the floods of the selected recurrence intervals.

Water-surface elevations of the selected floods, floodway data and flood insurance zone data were calculated through use of the computer program HEC-2 (Reference 8). Cross-section data for all detailed study reaches were obtained photogrammetrically from aerial photographs taken in April 1980. The cross sections were located at close intervals immediately upstream and downstream of all bridges in order to compute the backwater effects of these structures. Bridge opening geometrics for the reach were obtained from field surveys (January-March 1981). Information on some bridge openings was obtained from the Kentucky Bureau of Highways and from the Chessie System. Throughout the county, several small suspension footbridges were not considered. This was based on the bridges failing during major floods and on their not having a significant hydraulic effect.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles. For stream segments for which a floodway was computed (Section 4.2), selected cross-section locations are also shown on the Flood Boundary and Floodway Map.

Channel roughness coefficients (Manning's "n") for water-surface computations were determined by characteristics of historical floods in the study reach and existing flood plain conditions. On Levisa Fork, "n" values were verified by reproducing high water profiles from the 1977 flood (approximately 500-year frequency) with the HEC-2 computer program. Starting water-surface elevations were determined by the slope-area method. Roughness coefficients are summarized for each stream in Table 2.

Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals. Flood profiles for Tug Fork were obtained from the Mingo County, Unincorporated Areas, West Virginia Flood Insurance Study (Reference 9).

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
RATLIFF CREEK					
Mouth at Levisa Fork	1.7	440	780	1,000	1,480
Upper study limit	0.2	170	300	390	620
SHELBY CREEK					
At mouth	115	11,800	18,700	22,000	30,000
Downstream of Robinson Creek	103	10,500	16,900	19,900	27,200
Upstream of Robinson Creek	86.1	9,100	14,600	17,100	23,600
Upstream of Caney Fork	68.8	7,300	11,750	13,900	19,400
Upstream of Long Fork	33.3	3,400	5,500	6,420	9,100
Downstream of Beefhide Creek	25.8	2,800	4,600	5,400	7,600
Upstream of Beefhide Creek	14.1	1,650	2,710	3,200	4,570
Upstream of Dorton Creek	8.9	1,150	1,900	2,300	3,300
Upstream of Blaze Creek	6.2	805	1,500	1,810	2,600
Upstream of Three Mile Branch	3.5	620	1,100	1,320	1,950
MARROWBONE CREEK					
Mouth at Russell Fork	27.2	3,100	5,000	5,900	8,300
Upstream of Wolfpit Branch	23.5	2,550	4,200	4,900	7,000
Upstream of Dry Fork	18.7	2,100	3,450	4,000	5,700
Upstream of Rockhouse Creek	13.5	1,590	2,640	3,120	4,420
Upstream of Poor Bottom Fork	10.4	1,290	2,150	2,540	3,610
Upstream of Bowling Fork	4.5	730	1,230	1,510	2,180
Upstream of Brushy Branch	2.6	540	940	1,190	1,720

TABLE 1 - SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
JOHNS CREEK					
Downstream of Raccoon Creek	82.7	8,200	12,600	14,800	20,000
Upstream of Raccoon Creek	56.5	5,660	8,800	10,300	14,300
At gage at U.S. Route 119	56.3	5,610	8,720	10,200	14,200
RACCOON CREEK					
Mouth at Johns Creek	26.2	2,840	4,620	5,500	7,720
Upstream of Winn Creek	22.6	2,480	4,020	4,750	6,750
Upstream of Burning Fork	16.4	1,850	3,080	3,700	5,200
BIG CREEK					
Mouth at Tug Fork	59.4	5,020	8,220	9,700	13,500
At gage upstream of Lick Creek	56.1	4,840	7,850	9,350	13,000
Upstream of Swinge Branch	46.9	4,240	6,950	8,200	11,500
Upstream of Long Fork	40.2	3,760	6,200	7,330	10,400
Upstream of Elkins Fork	24.9	2,570	4,220	5,020	7,000
Downstream of Road Fork	20.2	2,280	3,730	4,450	6,200
POND CREEK					
Mouth at Tug Fork	40.7	3,800	6,260	7,400	10,350
Upstream of Road Fork	35.8	3,450	5,890	6,710	9,390
Upstream of Blackberry Fork	23.6	2,530	4,190	4,990	6,920
Upstream of Coburn Branch at Huddy	17.1	1,990	3,290	3,900	5,450
Upstream of Mullen Fork	12.4	1,580	2,590	3,080	4,300
Downstream of May Fork at State Route 1056	8.3	1,160	1,920	2,300	3,220

TABLE 1 - SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
BLACKBERRY CREEK					
Mouth at Tug Fork	20.2	2,280	3,730	4,450	6,200
Upstream of Peter Branch	18.1	2,090	3,440	4,090	5,710
Upstream of Hatfield Branch	15.6	1,870	3,060	3,660	5,080
PETER CREEK					
Mouth at Tug Fork	34.5	3,350	5,550	6,550	9,120
Downstream of Pointrock Branch	31.4	3,120	5,170	6,100	8,550
RIGHT FORK PETER CREEK					
Mouth at Peter Creek	13.4	1,670	2,750	3,280	4,550
Upper study limit (Phelps city limit)	12.8	1,610	2,650	3,160	4,400
LEFT FORK PETER CREEK					
Mouth at Peter Creek	15.6	1,870	3,060	3,660	5,080
Downstream of Beech Creek	10.5	1,390	2,290	2,720	3,800
Upstream of Beech Creek	8.5	1,180	1,960	2,330	3,270
ZEBULON TRIBUTARY					
Mouth at Burning Fork	0.5	255	480	620	980
BRUSHY BRANCH					
Mouth at Marrowbone Creek	1.2	370	670	860	1,280

TABLE 1 - SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA SQ MILES	PEAK DISCHARGES (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
ASHCAMP BRANCH					
Mouth at Elkhorn Creek	1.3	390	710	910	1,350
LEVISA FORK					
Floyd-Pike county line	1,275	35,000	50,000	57,000	75,000
Pikeville gage	1,237	32,600	46,700	53,000	70,300
Downstream of Shelby Creek	1,213	32,600	46,700	53,000	70,300
Downstream of Russell Fork	1,077	30,800	44,800	53,300	75,600
Downstream of Fishtrap Lake	392	8,000	8,000	8,000	8,000
RUSSELL FORK					
Mouth at Levisa Fork	679	31,000	45,200	54,200	77,600
Elkhorn City gage	554	31,000	45,200	54,200	77,600
BURNING FORK					
Mouth at Raccoon Creek	4.9	760	1,290	1,580	2,270
Upstream of Knob Fork	3.5	630	1,080	1,350	1,930
Downstream of Zebulon Tributary	2.4	525	920	1,162	1,682
TUG FORK					
At Williamson, West Virginia (River mile 52.7)	936	38,300	58,600	68,000	92,400
At Matewan (River mile 65.1)	872	37,000	56,000	64,500	86,500
Downstream of Knox Creek (River mile 77.75)	754	33,500	50,300	58,100	78,000
Upstream of Knox Creek (River mile 85.4)	641	30,000	46,000	54,000	74,000
Upstream of Ben Creek (River mile 94.2)	600	28,500	43,500	51,000	69,000

TABLE 2 - RANGE OF ROUGHNESS COEFFICIENTS
Manning's "n"

Stream Name	Channel	Overbanks
Ratliff Creek	0.04 - 0.065	0.08 - 0.12
Shelby Creek	0.035 - 0.065	0.06 - 0.12
Marrowbone Creek	0.05 - 0.06	0.08 - 0.11
Johns Creek	0.045 - 0.065	0.10 - 0.16
Raccoon Creek	0.06 - 0.07	0.11 - 0.12
Big Creek	0.05	0.10
Pond Creek	0.035 - 0.055	0.06 - 0.10
Blackberry Creek	0.05	0.10
Peter Creek	0.05	0.10
Left Fork Peter Creek	0.05	0.10
Right Fork Peter Creek	0.06	0.10
Zebulon Tributary	0.05 - 0.07	0.09 - 0.10
Brushy Branch	0.06	0.09 - 0.11
Ashcamp Branch	0.035 - 0.065	0.09 - 0.11
Levisa Fork	0.03 - 0.035	0.05 - 0.08
Russell Fork	0.035	0.07 - 0.08
Burning Fork	0.04 - 0.065	0.09 - 0.12
Tug Fork	0.022 - 0.041	0.045 - 0.10

The hydraulic analyses for this study are based only on the effects of unobstructed flow. The flood elevations shown on the profiles are, thus, considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced from National Geodetic Vertical Datum of 1929. Elevation reference marks used in the study are shown on the maps.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound flood plain management programs. Therefore, each Flood Insurance Study produces maps designed to assist communities in developing flood plain management measures.

4.1 Flood Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for flood plain management purposes. The 0.2 percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the 100- and 500-year flood plain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections the boundaries were interpolated using aerial photographs at a scale of 1:2400 with a contour interval of 5 feet (Reference 10).

The 100- and 500-year flood plain boundaries are shown on the Flood Boundary and Floodway Map. In cases where the 100- and 500-year flood plain boundaries are close together, only the 100-year boundary has been shown. Small areas within the flood plain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods only the 100-year flood plain boundary is shown.

4.2 Floodways

Encroachment on flood plains, such as structures and fill, reduces the flood-carrying capacity, increases the flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood plain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent flood plain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced.

The floodways presented in this study were computed on the basis of equal conveyance reduction from each side of the flood plain. The results of these computations were tabulated at selected cross sections for each stream segment for which a floodway was computed and are presented in Table 3, Floodway Data.

As shown on the Flood Boundary and Floodway Map, the floodway boundaries were computed at cross sections. Between cross sections, the boundaries were interpolated. In cases where the boundaries of the floodway and the 100-year flood are either close together or collinear, only the floodway boundary has been shown.

The area between the floodway and the 100-year flood plain boundaries is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

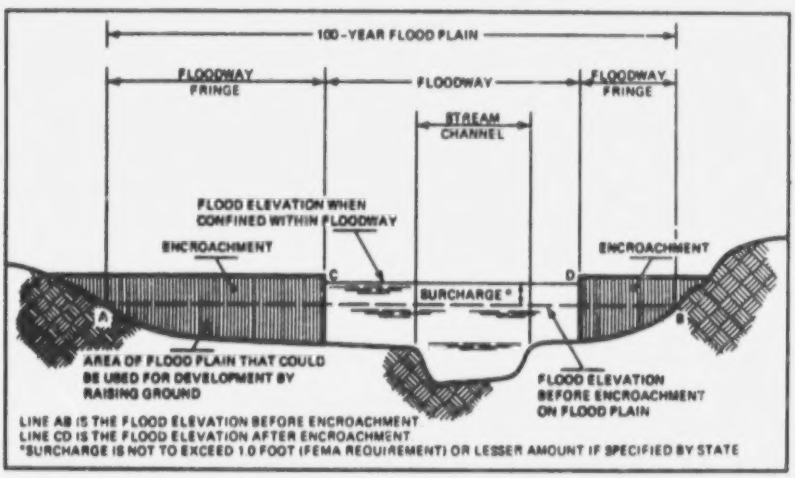
100-YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE *
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE AB IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE CD IS THE FLOOD ELEVATION AFTER ENCROACHMENT
*SURCHARGE IS NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE

FIGURE 2 - Floodway Schematic

The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

5.0 INSURANCE APPLICATION

To establish actuarial insurance rates, data from the engineering study must be transformed into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors, and flood insurance zone designations for each flooding source studied in detail affecting Pike County.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE DIFFERENCE (FEET)
RATLIFF CREEK								
A	0.074	50[2]	404	2.5	671.7	650.0[3]	650.0	0.0
B	0.132	35[2]	208	4.8	671.7	650.2[3]	650.2	0.0
C	0.428	65	320	3.1	672.8	672.8	673.3	0.5
D	0.618	40	104	9.0	685.0	685.0	685.0	0.0
E	0.727	90	656	1.4	699.1	699.1	699.8	0.7
F	0.815	39	349	2.7	703.5	703.5	703.6	0.1
G	0.855	70	383	2.4	703.7	703.7	703.8	0.1
H	0.952	20	95	9.4	710.4	710.4	710.7	0.3
I	1.009	90	336	2.7	717.1	717.1	717.6	0.5
J	1.087	20	79	11.4	719.8	719.8	719.8	0.0
K	1.255	85	322	2.8	737.4	737.4	738.1	0.7
L	1.318	23	82	10.9	739.4	739.4	739.5	0.1
M	1.337	60	192	4.4	742.4	742.4	742.4	0.0
N	1.560	19	98	8.1	762.2	762.2	762.3	0.1
O	1.629	60	187	4.2	770.1	770.1	770.7	0.6
P	1.659	20	183	4.3	774.5	774.5	774.8	0.3
Q	1.727	50	299	2.4	779.4	779.4	779.9	0.5
R	1.930	19	67	10.6	798.7	798.7	798.7	0.0
S	1.955	40	200	3.5	805.7	805.7	806.5	0.8
T	2.062	20	83	7.7	817.3	817.3	817.5	0.2
U	2.135	45	161	3.9	828.8	828.8	829.7	0.9
V	2.325	23	61	9.4	853.4	853.4	853.4	0.0
W	2.557	60	343	1.5	886.7	886.7	887.4	0.7
X	2.819	17	48	9.7	923.9	923.9	923.9	0.0
Y	2.828	48	125	3.5	926.0	926.0	926.0	0.0
Z	2.954	19	47	8.7	951.3	951.3	951.3	0.0

[1]MILES ABOVE MOUTH
[2]THIS WIDTH EXTENDS WITHIN AREA NOT INCLUDED
[3]ELEVATION WITHOUT CONSIDERING BACKWATER EFFECT FROM LEVISA FORK

REVISED 2/16/90

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

RATLIFF CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE DIFFERENCE (FEET)
SHELBY CREEK								
A	0.58	160	3290	6.7	687.2	683.2[2]	684.1	0.9
B	2.19	180	3087	7.1	698.9	698.9	699.7	0.8
C	2.53	370	6792	3.2	705.7	705.7	706.4	0.7
D	3.22	260	3978	5.3	709.5	709.5	710.2	0.7
E	3.42	410	6830	3.1	711.3	711.3	712.1	0.8
F	4.45	240	3273	6.5	718.2	718.2	719.0	0.8
G	5.00	285	4049	5.1	722.8	722.8	723.6	0.8
H	5.72	290	4035	5.1	730.1	730.1	730.8	0.7
I	6.61	430	6292	3.3	743.1	743.1	744.0	0.9
J	6.96	165	2306	9.0	743.7	743.7	744.4	0.7
K	7.26	270	2718	7.4	748.7	748.7	749.7	1.0
L	7.49	215	3015	6.7	750.8	750.8	751.6	0.8
M	7.69	130	1997	10.1	754.6	754.6	754.7	0.1
N	7.92	380	3564	5.6	756.5	756.5	757.4	0.9
O	8.37	100	1938	8.8	762.8	762.8	763.6	0.8
P	8.72	290	4027	4.2	771.9	771.9	772.5	0.6
Q	9.55	260	3959	4.3	786.3	786.3	787.1	0.8
R	9.73	405	1939	8.8	787.7	787.7	788.7	1.0
S	10.24	135	2062	8.1	793.2	793.2	793.9	0.7
T	10.74	245	3323	4.2	799.2	799.2	799.9	0.7
U	11.28	310	3670	3.8	805.6	805.6	806.4	0.8
V	11.54	265	3333	4.2	807.2	807.2	807.6	0.4
W	11.69	390	4591	3.0	808.7	808.7	809.5	0.8
X	11.83	105	1345	10.3	808.7	808.7	809.5	0.6
Y	12.34	70	1213	11.5	814.6	814.6	815.4	0.8
Z	12.50	150	2621	5.3	819.6	819.6	820.3	0.7

[1]MILES ABOVE MOUTH
[2]ELEVATION WITHOUT CONSIDERING BACKWATER EFFECT FROM LEVISA FORK

REVISED

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

SHELBY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE DIFFERENCE (FEET)
SHELBY CREEK								
AA	12.79	225	2194	6.3	821.2	821.2	822.2	1.0
AB	13.02	260	3622	3.7	825.7	825.7	826.7	1.0
AC	13.50	125	2002	6.7	830.4	830.4	830.9	0.5
AD	13.85	210	2343	2.7	834.3	834.3	835.1	0.8
AE	14.03	260	1718	3.7	835.3	835.3	836.0	0.7
AF	14.14	139	1410	4.6	836.0	836.0	836.7	0.7
AG	14.22	289	2193	2.9	836.8	836.8	837.5	0.7
AH	14.41	110	1027	6.3	839.1	839.1	839.7	0.6
AI	14.64	99	1089	5.9	842.5	842.5	843.0	0.5
AJ	14.82	243	1777	3.6	845.9	845.9	846.7	0.8
AK	15.26	235	1586	4.0	855.2	855.2	855.5	0.3
AL	15.68	115	1019	6.3	864.5	864.5	864.6	0.1
AM	15.95	80	886	7.2	870.6	870.6	870.7	0.1
AN	16.35	454	1769	3.6	875.3	875.3	875.7	0.4
AO	16.50	185	900	7.1	878.1	878.1	878.5	0.4
AP	16.89	120	836	7.7	888.1	888.1	888.5	0.4
AQ	17.20	59	463	13.9	894.6	894.6	895.2	0.6
AR	17.38	120	1468	4.4	903.7	903.7	903.9	0.2
AS	17.64	420	1952	3.3	905.2	905.2	905.6	0.4
AT	17.77	275	887	7.2	907.8	907.8	908.0	0.2
AU	17.90	88	736	8.7	912.4	912.4	912.6	0.2
AV	18.32	180	1103	5.3	921.8	921.8	922.3	0.5
AW	18.80	87	739	7.9	936.4	936.4	936.4	0.0
AX	19.13	210	1491	3.9	944.4	944.4	945.0	0.6
AY	19.28	110	1157	5.0	946.9	946.9	947.7	0.8
AZ	19.43	275	2225	2.6	948.5	948.5	949.5	1.0

[1]MILES ABOVE MOUTH

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

SHELBY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE DIFFERENCE (FEET)
SHELBY CREEK								
BA	19.56	125	1056	5.5	949.7	949.7	950.7	1.0
BB	20.02	80	722	8.0	957.7	957.7	958.7	1.0
BC	20.48	170	1234	2.6	966.9	966.9	967.6	0.7
BD	21.08	142	713	4.5	982.4	982.4	983.0	0.6
BE	21.64	45	365	8.2	999.8	999.8	1000.2	0.4
BF	22.35	42	254	9.1	1034.0	1034.0	1034.2	0.2
BG	22.84	45	233	9.4	1056.7	1056.7	1056.7	0.0
BH	23.33	58	274	6.6	1087.2	1087.2	1087.2	0.0
BI	23.83	40	155	11.3	1124.2	1124.2	1124.2	0.0
BJ	24.17	38	164	10.1	1152.9	1152.9	1153.1	0.2

[1]MILES ABOVE MOUTH

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

SHELBY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE DIFFERENCE (FEET)
MARROWBONE CREEK								
A	0.29	135	718	8.1	715.6	706.3[2]	706.8	0.5
B	1.14	80	773	7.3	730.3	730.3	730.3	0.0
C	1.20	60	630	8.9	731.4	731.4	731.4	0.0
D	1.32	164	1246	3.9	736.1	736.1	736.1	0.0
E	1.37	79	547	9.0	736.4	736.4	736.4	0.0
F	1.62	150	1256	3.9	747.6	747.6	747.9	0.3
G	1.82	200	462	10.4	750.5	750.5	750.5	0.0
H	2.17	261	886	5.4	758.5	758.5	759.1	0.6
I	2.34	300	1144	4.1	768.1	768.1	768.4	0.3
J	2.44	100	556	8.5	771.9	771.9	772.1	0.2
K	2.68	85	493	9.5	782.9	782.9	782.9	0.0
L	3.26	120	631	7.3	803.9	803.9	804.4	0.5
M	3.36	180	919	5.0	809.2	809.2	809.5	0.3
N	3.47	230	774	5.2	814.4	814.4	814.4	0.0
O	3.66	130	630	6.4	825.4	825.4	825.7	0.3
P	3.88	160	1227	3.3	838.1	838.1	839.1	1.0
Q	4.31	70	414	9.4	854.0	854.0	854.4	0.4
R	4.63	182	322	9.7	875.3	875.3	875.3	0.0
S	4.69	64	282	11.1	879.1	879.1	879.1	0.0
T	4.72	100	507	6.2	883.1	883.1	833.5	0.4
U	4.84	50	376	8.3	890.1	890.1	890.4	0.3
V	5.07	155	446	7.0	903.4	903.4	904.1	0.7
W	5.24	40	318	9.8	914.5	914.5	914.9	0.4
X	5.41	90	413	7.3	925.4	925.4	925.4	0.0
Y	5.52	120	719	4.2	933.2	933.2	933.8	0.6
Z	5.62	55	402	7.5	937.7	937.7	937.8	0.1

[1]MILES ABOVE MOUTH
[2]ELEVATION WITHOUT CONSIDERING BACKWATER EFFECT FROM RUSSELL FORK

REVISED

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

MARROWBONE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE DIFFERENCE (FEET)
MARROWBONE CREEK								
AA	5.82	135	628	4.8	951.7	951.7	952.4	0.7
AB	6.23	57	371	6.9	979.1	979.1	979.5	0.4
AC	6.30	100	482	5.3	982.7	982.7	983.5	0.8
AD	6.66	68	373	6.5	1003.7	1003.7	1003.7	0.0
AE	7.04	50	344	7.1	1027.0	1027.0	1027.2	0.2
AF	7.49	25	164	9.2	1061.6	1061.6	1061.7	0.1
AG	7.82	25	154	9.8	1093.6	1093.6	1094.2	0.6
AH	7.90	70	306	4.9	1102.2	1102.2	1102.5	0.3
AI	8.07	25	172	8.3	1115.0	1115.0	1115.8	0.8
AJ	8.32	60	270	5.3	1137.6	1137.6	1137.8	0.2
AK	8.44	26	133	9.0	1147.4	1147.4	1148.0	0.6

[1]MILES ABOVE MOUTH

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

MARROWBONE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE DIFFERENCE (FEET)
JOHNS CREEK								
A	41.60	460	6360	2.3	732.0	732.0	732.8	0.8
B	41.71	360	5084	2.9	732.5	732.5	733.3	0.8
C	41.83	440	5634	2.6	733.4	733.4	734.2	0.8
D	42.12	200	2572	4.0	735.3	735.3	736.2	0.9
E	42.69	425	4968	2.1	739.1	739.1	740.1	1.0
F	42.92	265	2325	4.4	739.7	739.7	740.6	0.9
G	42.95	315	4302	2.4	740.3	740.3	741.3	1.0
H	43.08	230	3312	3.1	740.6	740.6	741.6	1.0
I	43.20	320	4722	2.2	741.2	741.2	742.2	1.0
J	43.48	215	3740	2.7	742.2	742.2	743.1	0.9
K	44.01	470	6241	1.6	744.6	744.6	745.5	0.9
L	44.30	290	3892	2.6	745.4	745.4	746.4	1.0
M	44.44	420	4837	2.1	745.9	745.9	746.9	1.0
N	44.55	300	3231	3.1	746.2	746.2	747.2	1.0
O	44.68	455	5255	1.9	746.9	746.9	747.9	1.0

[1]MILES ABOVE MOUTH

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

JOHNS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE DIFFERENCE (FEET)
RACCOON CREEK								
A	0.23	250	1783	3.1	734.2	729.8[2]	730.1	0.3
B	1.00	160	1660	3.3	736.5	736.5	737.5	1.0
C	1.07	70	798	6.9	737.2	737.2	738.0	0.8
D	1.27	300	2108	2.6	740.7	740.7	741.5	0.8
E	1.44	95	1034	5.3	742.2	742.2	743.2	1.0
F	1.85	270	2904	1.6	745.3	745.3	746.1	0.8
G	2.11	215	1584	3.0	746.6	746.6	747.5	0.9
H	2.44	280	1597	3.0	749.8	749.8	750.7	0.9
I	2.83	150	1086	4.1	755.9	755.9	756.5	0.6

[1]MILES ABOVE MOUTH
[2]ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM JOHNS CREEK

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

RACCOON CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BIG CREEK								
A	0.10	100/80[2]	1646	5.9	652.0	629.0[3]	629.5	0.5
B	0.75	170	2590	3.7	652.0	634.9[3]	635.8	0.9
C	0.89	300	3645	2.7	652.0	635.9[3]	636.8	0.9
D	0.99	100	1790	5.4	652.0	636.2[3]	637.0	0.8
E	1.12	200	2824	3.4	652.0	637.5[3]	638.4	0.9
F	1.30	100	1911	5.1	652.0	638.3[3]	639.2	0.9
G	1.46	200	2860	3.4	652.0	639.2[3]	640.1	0.9
H	1.78	140	2446	4.0	652.0	640.9[3]	641.7	0.8
I	2.23	200	2658	3.5	652.0	643.0[3]	643.8	0.8
J	2.31	500	6558	1.4	652.0	643.5[3]	644.4	0.9
K	2.35	350	4657	2.0	652.0	643.5[3]	644.4	0.9
L	2.56	550	8018	1.2	652.0	643.9[3]	644.8	0.9
M	2.76	300	4516	2.1	652.0	644.0[3]	644.9	0.9
N	3.07	450	6146	1.5	652.0	644.6[3]	645.5	0.9
O	3.43	200	2691	3.5	652.0	645.4[3]	646.2	0.8
P	3.79	300	2709	3.5	652.0	647.9[3]	648.8	0.9
Q	3.90	200	2378	3.9	652.0	648.7[3]	649.5	0.8
R	3.97	300	3275	2.9	652.0	649.4[3]	650.1	0.7
S	4.10	200	2807	3.3	652.0	650.1[3]	650.7	0.6
T	4.28	100	1510	6.2	652.0	650.8[3]	651.5	0.7
U	4.52	100	1780	5.3	657.0	657.0	657.0	0.0
V	4.59	300	4668	2.0	657.6	657.6	658.1	0.5
W	5.06	100	1528	5.7	658.3	658.3	658.9	0.6
X	5.25	300	4355	2.0	660.2	660.2	660.9	0.7
Y	5.55	400	4131	2.1	660.8	660.8	661.5	0.7
Z	5.97	200	2816	2.9	662.0	662.0	662.8	0.8

[1]MILES ABOVE MOUTH
[2]TOTAL WIDTH / WIDTH WITHIN UNINCORPORATED AREA
[3]ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM TUG FORK

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

BIG CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BIG CREEK								
AA	6.76	375	4091	2.0	665.6	665.6	666.3	0.7
AB	7.52	100	1349	5.4	671.3	671.3	672.0	0.7
AC	8.12	280	2824	2.6	675.4	675.4	676.4	1.0
AD	8.47	100	1261	5.8	677.7	677.7	678.2	0.5
AE	9.48	200	2576	2.7	688.6	688.6	689.2	0.6
AF	9.77	400	4659	1.5	689.4	689.4	690.1	0.7
AG	9.91	175	1837	3.7	689.6	689.6	690.2	0.6
AH	10.64	300	2737	1.8	692.7	692.7	693.4	0.7
AI	10.85	130	1505	3.3	693.7	693.7	694.4	0.7
AJ	11.07	300	2742	1.8	695.0	695.0	695.7	0.7
AK	11.36	180	1080	4.6	696.7	696.7	697.4	0.7
AL	11.98	75	1063	4.7	705.4	705.4	705.6	0.2
AM	12.65	150	1419	3.5	710.6	710.6	711.2	0.6
AN	13.44	325	1825	2.8	721.7	721.7	722.5	0.8
AO	13.52	100	800	6.3	722.9	722.9	723.2	0.3
AP	13.72	60	574	8.7	728.4	728.4	728.7	0.3
AQ	13.74	100	1147	4.4	730.9	730.9	730.9	0.0
AR	14.19	70	771	5.9	735.4	735.4	736.4	1.0
AS	14.85	70	714	6.2	746.6	746.6	746.9	0.3
AT	15.08	120	1009	4.4	749.9	749.9	750.6	0.7

[1]MILES ABOVE MOUTH

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

BIG CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE DIFFERENCE (FEET)
POND CREEK								
A	0.10	70	742	10.0	670.7	643.8[2]	644.7	0.9
B	0.40	85	1146	6.5	670.7	651.9[2]	652.0	0.1
C	0.53	200	1677	4.4	670.7	653.6[2]	653.9	0.3
D	0.82	225	2566	2.9	670.7	655.1[2]	655.7	0.6
E	1.09	355	3529	2.1	670.7	655.8[2]	656.6	0.8
F	1.19	500	4487	1.6	670.7	656.1[2]	656.9	0.8
G	1.27	215	2300	2.9	670.7	656.2[2]	656.9	0.7
H	1.34	90	954	7.0	670.7	656.2[2]	656.9	0.7
I	1.41	130	1412	4.8	670.7	658.0[2]	658.6	0.6
J	1.83	100	1272	5.3	670.7	662.7[2]	663.4	0.7
K	2.05	320	2703	2.5	670.7	664.4[2]	665.2	0.8
L	2.08	230	2068	3.2	670.7	664.5[2]	665.3	0.8
M	2.24	300	1821	3.7	670.7	665.5[2]	666.3	0.8
N	2.43	200	1869	3.6	670.7	666.6[2]	667.6	1.0
O	2.77	330	2547	2.6	670.7	669.9[2]	670.7	0.8
P	3.05	110	1039	6.5	671.3	671.3	672.1	0.8
Q	3.17	170	1726	3.9	673.1	673.1	673.8	0.7
R	3.22	115	1288	5.2	673.5	673.5	674.1	0.6
S	3.68	120	1164	4.3	679.0	679.0	680.0	1.0
T	3.86	70	698	7.1	680.8	680.8	681.3	0.5
U	4.42	110	1103	4.4	690.3	690.3	690.4	0.1
V	4.49	50	481	10.1	690.3	690.3	690.4	0.1
W	4.67	230	1162	4.2	694.6	694.6	695.1	0.5
X	4.69	170	1098	4.4	695.4	695.4	696.2	0.8
Y	4.97	135	845	5.7	698.6	698.6	699.4	0.8
Z	5.34	65	677	6.8	704.9	704.9	705.9	1.0

[1]MILES ABOVE MOUTH
[2]ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM TUG FORK

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

POND CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
POND CREEK								
AA	5.77	80	606	7.7	711.9	711.9	712.2	0.6
AB	6.56	120	1181	3.9	732.6	732.6	733.5	0.9
AC	6.66	50	511	9.1	733.2	733.2	734.2	1.0
AD	7.03	140	1179	3.7	742.3	742.3	742.9	0.6
AE	7.48	50	394	10.9	752.0	752.0	752.4	0.4
AF	8.27	60	453	8.6	774.9	774.9	775.4	0.5
AG	8.41	100	579	6.7	780.7	780.7	781.4	0.7
AH	8.98	50	424	9.2	794.5	794.5	795.2	0.7
AI	9.30	120	452	6.8	805.5	805.5	805.8	0.3
AJ	9.35	205	870	3.5	808.6	808.6	809.2	0.6
AK	9.43	105	493	6.3	810.0	810.0	810.8	0.8
AL	9.50	60	404	7.6	814.0	814.0	814.8	0.8
AM	10.04	80	344	6.9	833.0	833.0	833.2	0.2
AN	10.17	45	318	7.4	839.1	839.1	839.8	0.7
AO	10.71	55	396	6.0	866.0	866.0	866.5	0.5

[1]MILES ABOVE MOUTH

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

POND CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BLACKBERRY CREEK								
A	0.05	50	383	11.6	704.0	680.2[2]	680.9	0.7
B	0.22	115	613	7.3	704.0	688.7[2]	688.8	0.1
C	0.39	60	564	7.6	704.0	692.2[2]	692.6	0.4
D	0.89	200	1104	4.0	704.0	699.7[2]	700.1	0.4
E	1.33	100	756	5.4	711.1	711.1	712.1	1.0
F	1.80	200	1070	3.8	722.6	722.6	723.2	0.6
G	2.36	80	559	7.3	741.9	741.9	742.1	0.2
H	3.22	50	457	8.0	769.0	769.0	769.4	0.4
I	3.67	100	644	5.7	784.1	784.1	785.1	1.0
J	4.01	50	371	9.9	799.2	799.2	799.3	0.1
K	4.22	150	802	4.6	804.8	804.8	805.5	0.7
L	4.66	150	903	3.8	822.5	822.5	822.7	0.2
M	4.94	60	484	7.0	829.2	829.2	829.4	0.2

[1]MILES ABOVE MOUTH
[2]ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM TUG FORK

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

BLACKBERRY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
PETER CREEK								
A	0.02	80	663	9.9	722.1	701.1[2]	701.3	0.2
B	0.24	150	1097	6.0	722.1	709.6[2]	710.3	0.7
C	0.83	130	1211	5.4	722.1	720.2[2]	720.8	0.6
D	0.97	200	1615	4.1	723.3	723.3	724.1	0.8
E	1.31	100	834	7.9	729.9	729.9	730.4	0.5
F	1.77	250	1280	5.1	740.1	740.1	740.6	0.5
G	1.93	150	1216	5.4	743.3	743.3	743.6	0.3
H	2.04	200	1196	5.5	744.9	744.9	745.9	1.0
I	2.28	70	559	11.7	750.8	750.8	751.6	0.8
J	2.60	70	873	7.5	762.1	762.1	763.0	0.9
K	2.80	100	1025	6.4	766.1	766.1	766.8	0.7
L	3.46	70	833	7.9	783.1	783.1	783.3	0.2
M	3.73	100	1479	4.4	788.1	788.1	788.7	0.6
N	3.87	60	756	8.1	789.6	789.6	790.4	0.8
O	4.16	60	534	11.4	797.1	797.1	797.6	0.5
P	4.18	100	956	6.4	800.7	800.7	800.8	0.1
Q	4.97	100	1168	5.2	823.2	823.2	823.6	0.4
R	5.13	150	1211	5.0	825.6	825.6	826.4	0.8
S	5.36	150	745	8.2	831.8	831.8	831.8	0.0
T	5.53	240	1449	4.2	836.9	836.9	837.5	0.6
U	5.66	150	973	6.3	838.9	838.9	839.7	0.8

[1]MILES ABOVE MOUTH
[2]ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM TUG FORK

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

PETER CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
RIGHT FORK PETER CREEK								
A	0.106	70	373	8.8	844.7	844.6[2]	844.9	0.3
B	0.367	80	573	5.7	856.6	856.6	857.0	0.4
C	0.551	73	323	10.1	863.3	863.3	863.5	0.2
D	0.663	80	508	6.2	870.2	870.2	870.4	0.2

[1]MILES ABOVE MOUTH
[2]ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM PETER CREEK

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

RIGHT FORK PETER CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
LEFT FORK PETER CREEK								
A	0.19	120	935	6.8	847.6	847.6	847.6	0.0
B	0.50	80	681	5.4	863.4	863.4	863.6	0.2
C	0.72	80	506	7.3	868.8	868.8	869.0	0.2
D	0.87	80	627	5.8	873.9	873.9	874.7	0.8
E	1.07	150	823	4.4	880.8	880.8	880.9	0.1
F	1.26	80	411	9.0	885.4	885.4	885.7	0.3
G	1.49	80	467	7.1	892.0	892.0	892.5	0.5
H	1.56	175	735	4.5	894.8	894.8	895.5	0.7
I	1.72	100	513	6.3	898.5	898.5	899.0	0.5
J	1.91	140	726	4.1	905.4	905.4	906.1	1.0
K	1.97	70	378	8.7	906.4	906.4	906.8	0.4
L	2.08	174	851	3.9	912.3	912.3	912.5	0.2
M	2.11	100	615	5.3	913.4	913.4	913.9	0.5
N	2.31	200	1040	2.9	919.6	919.6	919.7	0.1
O	2.41	75	359	7.4	920.2	920.2	920.9	0.7
P	2.59	150	353	4.5	929.9	929.9	929.9	0.0
Q	2.80	80	451	6.6	941.4	941.4	941.7	0.3
R	3.02	70	390	6.0	954.2	954.2	954.3	0.1
S	3.03	45	280	8.3	954.2	954.2	954.3	0.1
T	3.05	70	441	5.3	957.2	957.2	957.2	0.0
U	3.88	70	291	7.2	1011.2	1011.2	1011.5	0.3

[1]MILES ABOVE MOUTH

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

LEFT FORK PETER CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
ZEBULON TRIBUTARY								
A	0.04	27	68	9.1	860.9	860.9	860.9	0.0
B	0.18	75	357	1.7	887.4	887.4	888.2	0.8
BRUSHY BRANCH								
A	0.026	17	67	12.8	1146.3	1141.8[2]	1142.6	0.8
B	0.074	20	75	11.5	1150.1	1150.1	1150.1	0.0
C	0.098	29	69	12.5	1153.8	1153.8	1153.9	0.1
D	0.124	15	61	14.1	1159.1	1159.1	1159.1	0.0
E	0.172	40	94	9.2	1175.4	1175.4	1175.5	0.1
F	0.209	20	74	11.7	1181.4	1181.4	1181.4	0.0
G	0.322	16	64	13.4	1198.2	1198.2	1198.2	0.0
H	0.405	19	59	13.5	1210.6	1210.6	1210.9	0.3
I	0.[illegible]	25	87	9.1	1220.3	1220.3	1220.3	0.0
J	0.471	25	85	9.3	1227.4	1227.4	1227.7	0.3
K	0.520	25	86	9.2	1236.3	1236.3	1236.6	0.3
L	0.576	21	28	28.4	1244.0	1244.0	1244.0	0.0
M	0.610	19	31	25.3	1252.2	1252.2	1252.2	0.0

[1]MILES ABOVE MOUTH
[2]ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM MARROWBONE CREEK

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

ZEBULON TRIBUTARY – BRUSHY BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
ASHCAMP BRANCH								
A	0.026	38	173	5.2	1063.7	1063.7	1063.7	0.0
B	0.238	50	197	4.6	1096.1	1096.1	1096.3	0.2
C	0.577	40	171	5.3	1139.2	1139.2	1139.6	0.4
D	0.755	35	104	9.2	1164.3	1164.3	1164.7	0.4
E	1.027	50	227	3.8	1203.2	1203.2	1204.1	0.9
F	1.269	35	93	7.6	1242.7	1242.7	1243.0	0.3
G	1.555	20	63	9.4	1303.0	1303.0	1303.2	0.2
H	1.767	13	43	10.9	1351.1	1351.1	1351.2	0.1
I	1.993	20	38	10.4	1409.1	1409.1	1409.3	0.2

¹MILES ABOVE MOUTH

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

ASHCAMP BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
LEVISA FORK								
A	76.82	455[2]	13,818	4.4	666.1	666.1	666.9	0.8
B	77.27	507	12,382	4.9	666.3	666.3	667.2	0.9
C	77.58	437	14,458	4.2	666.7	666.7	667.6	0.9
D	78.32	485	11,849	5.1	667.0	667.0	668.0	1.0
E	78.62	427	14,627	4.2	667.4	667.4	668.4	1.0
F	79.08	303	11,302	5.4	667.6	667.6	668.6	1.0
G	79.18	328	11,716	5.2	667.7	667.7	668.7	1.0
H	79.40	366	11,107	5.5	667.7	667.7	668.7	1.0
I	79.63	495	15,713	3.9	668.3	668.3	669.2	0.9
J	79.91	905	17,036	3.6	668.4	668.4	669.4	1.0
K	80.98	577	11,363	5.4	668.9	668.9	669.9	1.0
L	81.28	557	14,711	4.1	669.4	669.4	670.4	1.0
M	81.67	580[3]	13,795	4.4	669.6	669.6	670.6	1.0
N	82.13	273[3]	9975	6.1	669.7	669.7	670.6	0.9
O	82.49	696[4]	15,763	3.9	670.4	670.4	671.4	1.0
P	82.69	395[1]	13,984	4.4	670.5	670.5	671.4	0.9
Q	82.73	608[4]	17,502	3.5	670.8	670.8	671.6	0.8
R	82.91	943[3]	17,382	3.5	670.8	670.8	671.8	1.0
S	83.44	1233[3]	17,629	3.5	671.1	671.1	672.0	0.9
T	84.31	302[2]	10,466	5.8	671.5	671.5	672.4	0.9
U	89.21	309[1]	11,113	5.5	681.5	681.5	682.4	0.9
V	90.11	321[1]	10,579	5.8	682.4	682.4	683.3	0.9
W	91.51	273	8984	6.8	684.1	684.1	685.0	0.9
X	92.41	299	8836	6.9	685.1	685.1	686.0	0.9
Y	93.24	306	9506	6.4	686.9	686.9	687.9	1.0
Z	93.94	233	7855	7.8	687.7	687.7	688.7	1.0

[1] MILES ABOVE MOUTH
[2] THIS WIDTH EXTENDS BEYOND COUNTY BOUNDARY
[3] THIS WIDTH EXTENDS WITHIN AREA NOT INCLUDED
[4] THIS WIDTH IS WITHIN AREA NOT INCLUDED

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

LEVISA FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE*	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
LEVISA FORK								
AA	94.69	490	13,548	4.5	689.7	689.7	690.7	1.0
AB	95.00	304	8918	6.8	689.7	689.7	690.7	1.0
AC	95.18	340	8659	7.0	689.9	689.9	690.8	0.9
AD	95.73	304	8394	7.3	690.7	690.7	691.7	1.0
AE	95.84	411	11,120	5.5	691.4	691.4	692.4	1.0
AF	96.18	276	8663	7.6	691.5	691.5	692.5	1.0
AG	97.37	599	12,900	4.7	694.2	694.2	695.1	0.9
AH	97.73	204	5861	1.4	695.3	695.3	696.2	0.9
AI	98.78	362	6648	1.2	695.4	695.4	696.3	0.9
AJ	99.25	135	3248	2.5	695.4	695.4	696.3	0.9
AK	99.56	171	4256	1.9	695.6	695.6	696.5	0.9
AL	99.90	162	3685	2.2	695.6	695.6	696.5	0.9
AM	100.22	216	4636	1.7	695.7	695.7	696.6	0.9

*MILES ABOVE MOUTH

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

LEVISA FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
RUSSELL FORK								
A	0.13	399	8850	8.5	694.8	694.8	695.8	1.0
B	0.99	476	12,217	6.1	701.0	701.0	701.4	0.4
C	1.57	226	6361	11.8	702.7	702.7	703.1	0.4
D	1.82	499	11,321	6.6	705.8	705.8	706.2	0.4
E	2.06	546	9995	7.5	706.4	706.4	706.8	0.4
F	2.80	644	15,813	4.7	710.8	710.8	711.3	0.5
G	3.21	358	9621	7.8	711.5	711.5	711.9	0.4
H	3.34	471	11,573	6.5	712.8	712.8	713.3	0.5
I	3.78	380	10,831	6.9	713.8	713.8	714.3	0.5
J	4.09	580	15,820	4.7	715.6	715.6	716.1	0.5
K	4.48	260	7361	9.8	715.7	715.7	716.2	0.5
L	5.04	559	10,959	6.6	718.6	718.6	719.1	0.5
M	5.29	429	6871	10.6	718.8	718.8	719.2	0.4
N	5.82	534	10,923	6.6	722.7	722.7	723.1	0.4
O	6.43	325	7911	9.2	726.5	726.5	726.9	0.4
P	6.60	494	11,756	6.2	728.3	728.3	728.8	0.5
Q	7.02	259	6082	11.9	728.5	728.5	728.9	0.4
R	7.52	404	8755	8.3	734.2	734.2	734.7	0.5
S	7.76	261	6170	11.8	735.1	735.1	735.5	0.4
T	8.02	396	6732	10.8	735.7	735.7	736.1	0.4
U	8.21	206	4575	15.8	739.8	739.8	740.1	0.3
V	8.42	373	7575	9.6	744.1	744.1	744.5	0.4
W	9.07	706	11,192	6.5	750.2	750.2	750.7	0.5
X	9.23	201	4974	14.6	750.2	750.2	750.6	0.4
Y	9.42	333	6517	11.1	752.3	752.3	752.7	0.4
Z	9.60	255	6358	11.4	754.5	754.5	755.0	0.5

[1]MILES ABOVE MOUTH

REVISED

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

RUSSELL FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
RUSSELL FORK								
AA	10.18	505	8255	8.8	759.8	759.8	760.5	0.7
AB	10.61	153	3422	21.2	762.7	762.7	763.4	0.7
AC	11.20	645	8161	8.9	772.5	772.5	773.3	0.8
AD	14.40	183[3]	3214	20.7	819.2	819.2	819.2	0.0
AE	14.64	299	6028	11.0	831.0	831.0	831.0	0.0
AF	15.14	218	5168	12.9	851.6	851.6	851.6	0.0
AG	15.35	309	6895	9.6	855.5	855.5	855.6	0.1
AH	15.58	199	3504	19.0	858.2	858.2	858.6	0.4
BURNING FORK								
A	0.003	60	295	5.3	756.2	752.6[2]	753.0	0.4
B	0.272	39	195	8.0	765.2	765.2	765.2	0.0
C	0.374	60	330	4.1	769.9	769.9	770.1	0.2
D	0.436	35	159	8.4	773.0	773.0	773.0	0.0
E	0.468	70	548	2.5	778.1	778.1	778.8	0.7
F	0.535	30	119	11.3	778.6	778.6	778.6	0.0
G	0.871	85	426	3.2	805.0	805.0	806.0	1.0
H	1.062	50	184	6.7	816.3	816.3	816.4	0.1
I	1.264	95	552	2.2	831.5	831.5	832.3	0.8
J	1.457	30	148	8.4	840.4	840.4	840.9	0.5
K	1.581	65	287	4.0	848.5	848.5	849.0	0.5
L	1.655	45	219	5.3	853.7	853.7	854.6	0.9

[1]MILES ABOVE MOUTH
[2]ELEVATION WITHOUT CONSIDERING BACKWATER EFFECT FROM RACCOON CREEK
[3]THIS WIDTH EXTENDS WITHIN AREA NOT INCLUDED

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

RUSSELL FORK — BURNING FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE DIFFERENCE (FEET)
TUG FORK								
AA	55.80	359/240	11,645	5.8	664.9	664.9	665.7	0.8
AB	56.05	321/260	11,432	5.9	665.2	665.2	666.1	0.9
AC	56.15	603/500	16,196	4.2	665.6	665.6	666.6	1.0
AD	56.58	275/200	10,323	6.6	665.9	665.9	666.9	1.0
AE	56.92	245/150	8988	7.6	666.3	666.3	667.3	1.0
AF	57.08	731/240	12,069	5.6	667.4	667.4	668.4	1.0
AG	57.30	941/170	10,061	6.8	668.0	668.0	668.9	0.9
AH	57.52	990/250	12,089	5.6	668.8	668.8	669.8	1.0
AI	57.81	620/350	10,086	6.7	669.5	669.5	670.4	0.9
AJ	58.00	609/200	12,211	5.6	670.2	670.2	671.1	0.9
AK	58.11	845/320	15,577	4.4	671.0	671.0	671.9	0.9
AL	58.74	412/150	11,201	6.1	671.8	671.8	672.7	0.9
AM	59.02	503/130	11,535	5.9	672.5	672.5	673.4	0.9
AN	59.82	509/210	16,647	4.1	674.6	674.6	675.6	1.0
AO	60.55	573/220	18,527	3.7	675.8	675.8	676.8	1.0
AP	60.93	229/120	9231	7.4	676.0	676.0	677.0	1.0
AQ	61.18	395/210	12,734	5.3	676.7	676.7	677.7	1.0
AR	61.58	539/130	15,357	4.4	677.7	677.7	678.7	1.0
AS	61.96	367/300	10,181	6.7	678.1	678.1	679.1	1.0
AT	62.41	271/110	10,146	6.7	679.3	679.3	680.3	1.0
AU	62.82	708/550	14,527	4.7	680.3	680.3	681.3	1.0
AV	63.29	1013/690	31,731	2.1	681.5	681.5	682.5	1.0
AW	63.84	543/450	15,652	4.3	682.2	682.2	683.2	1.0
AX	64.56	419/31	10,488	6.5	683.5	683.5	684.5	1.0
AY	65.12	688/52	9707	6.6	684.8	684.8	685.8	1.0
AZ	65.22	293/45	9020	7.2	685.2	685.2	686.1	0.9

[1]MILES ABOVE MOUTH
[2]TOTAL WIDTH / WIDTH WITHIN UNINCORPORATED AREA

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUG FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH FT	SECTION AREA SQ FEET	MEAN VELOCITY FEET SEC	REGULATORY FEET NGVD	WITHOUT FLOODWAY FEET NGVD	WITH FLOODWAY FEET NGVD	INCREASE DIFFERENCE FEET
TUG FORK								
BA	65.57	313 91	12 592	6 1	687 6	687.6	688.5	0 9
BB	66 [illegible]	392 35	12 470	5 2	688 5	688.5	689.4	0 9
BC	66 43	540 300	13 430	4 8	689 0	689.0	690 0	1 0
BD	66 73	315 50	10 819	8 0	689 4	689.4	690.4	1 0
BE	67 05	241 50	5954	9 2	690 0	690.0	691 0	1 0
BF	67 39	580 124	18 663	3 5	691 4	691.4	692.4	1 0
BG	67 66	577 64	12 694	5 1	691 6	691.6	692.6	1 0
BH	68 31	282 100	9274	6 9	692 7	692.7	693.6	0 9
BI	69 08	280 31	8607	7 5	694 2	694.2	695.1	0 9
BJ	69 35	582 14	15 478	4 2	695 4	695.4	696 3	0 9
BK	69 63	403 310	9440	6 8	698 0	698 0	698.9	0 9
BL	70 20	280 170	9274	7 0	698 9	698.9	699.9	1 0
BM	70 30	410 227	12 056	5 4	699 2	699.2	700 2	1 0
BN	70 64	285 110	9604	6 7	700 5	700.5	701 4	0 9
BO	70 84	604 130	17 939	3 6	701 2	701.2	702 2	1 0
BP	71 00	392 125	12 317	5 2	701 3	701.3	702 3	1 0
BQ	71 44	542 300	15 239	3 5	702 5	702.5	703 5	1 0
BR	71 89	300 160	9266	7 0	703 1	703 1	704 0	0 9
BS	72 47	304 120	9418	6 8	704 9	704 9	705 9	1 0
BT	73 51	455 120	11 354	5 7	707 9	707 9	708 9	1 0
BU	73 62	688 420	12 968	5 0	708 1	708.1	709 1	1 0
BV	73 78	333 250	8703	7 4	708 3	708 3	709 3	1 0
BW	74 54	330 180	9142	7 1	710 3	710 3	711 2	0 9
BX	75 18	340 180	9674	6 7	712 3	712 3	713 2	0 9
BY	76 08	502 330	12 946	5 0	715 3	715 3	716 2	0 9
BZ	77 16	285 130	9168	7 9	720 4	720 4	720 9	0 5

[1] MILES ABOVE MOUTH
[2] TOTAL WIDTH - WIDTH WITHIN UNINCORPORATED AREA

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUG FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE DIFFERENCE (FEET)
TUG FORK								
CA	78.19	280/150	8116	7.2	724.2	724.2	725.0	0.8
CB	79.13	285/190	7989	7.3	726.8	726.8	727.7	0.9
CC	80.13	255/70	6471	9.0	730.2	730.2	731.2	1.0
CD	81.16	245/160	7230	8.0	733.5	733.5	734.4	0.9
CE	81.93	489/180	10,964	5.3	737.0	737.0	737.9	0.9
CF	82.42	352/80	7182	8.1	737.6	737.6	738.6	1.0
CG	83.55	187/70	4608	12.6	742.4	742.4	743.2	0.8
CH	84.24	417/70	9407	6.2	748.9	748.9	749.9	1.0
CI	85.27	354/200	7012	7.7	753.0	753.0	754.0	1.0
CJ	86.63	187/70	4754	11.4	760.8	760.8	761.2	0.4
CK	87.19	210/100	5281	10.2	763.5	763.5	764.3	0.8
CL	89.19	197/100	4351	12.4	775.5	775.5	776.3	0.8
CM	90.16	326/150	6890	7.8	785.8	785.8	786.3	0.5
CN	91.26	233/100	5436	9.9	792.6	792.6	793.5	0.9
CO	92.45	179/120	3632	14.9	802.5	802.5	803.4	0.9
CP	93.22	205/150	3951	13.7	812.4	812.4	813.2	0.8
CQ	93.96	630/30	7707	7.0	821.5	821.5	822.3	0.8
CR	94.17	327/30	5935	8.6	822.1	822.1	822.8	0.7

[1]MILES ABOVE MOUTH
[2]TOTAL WIDTH / WIDTH WITHIN UNINCORPORATED AREA

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUG FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TUG FORK								
A	49.07	286,170	10,672	6.8	653.0	653.0	653.9	0.9
B	49.50	447,300	13,904	5.2	653.9	653.9	654.8	0.9
C	49.90	285,200	10,876	6.7	654.3	654.3	655.2	0.9
D	50.00	670,280	14,217	5.1	654.7	654.7	655.6	0.9
E	50.40	384,270	12,027	6.0	655.0	655.0	655.9	0.9
F	50.54	535,270	14,735	4.9	655.4	655.4	656.3	0.9
G	51.13	570,360	16,258	4.5	656.5	656.5	657.4	0.9
H	51.38	830,500	20,417	3.6	658.0	658.0	658.8	0.8
I	51.68	726,290	21,474	3.4	658.3	658.3	659.1	0.8
J	52.03	457,380	14,838	4.9	658.5	658.5	659.3	0.8
K	52.36	454,360	11,920	6.1	658.8	658.8	659.6	0.8
L	52.63	433,320	13,227	5.5	659.7	659.7	660.5	0.8
M	52.96	256,130	10,140	6.7	660.1	660.1	660.9	0.8
N	53.25	555,460	13,155	5.2	660.8	660.8	661.6	0.8
O	53.36	704,600	15,235	4.5	661.0	661.0	661.9	0.9
P	53.56	517,300	14,112	4.3	661.2	661.2	662.1	0.9
Q	53.76	639,480	20,413	3.3	661.7	661.7	662.6	0.9
R	54.06	273,140	10,258	6.6	661.7	661.7	662.6	0.9
S	54.38	606,180	11,830	5.7	662.2	662.2	663.1	0.9
T	54.54	269,200	10,206	6.7	662.3	662.3	663.2	0.9
U	54.80	229,190	9362	7.3	662.7	662.7	663.6	0.9
V	54.99	550,500	13,830	4.9	663.5	663.5	664.4	0.9
W	55.09	295,260	10,302	6.6	663.5	663.5	664.4	0.9
X	55.29	230,120	8669	7.8	663.6	663.6	664.5	0.9
Y	55.46	735,200	14,711	4.6	664.6	664.6	665.5	0.9
Z	55.81	800,280	15,173	4.5	664.9	664.9	665.7	0.8

MILES ABOVE MOUTH
(TOTAL WIDTH - WIDTH WITHIN UNINCORPORATED AREA)

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOODWAY DATA

TUG FORK

5.1 Reach Determinations

Reaches are defined as sections of flood plain that have relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference may not have a variation greater than that indicated in the following table for more than 20 percent of the reach:

Average Difference Between 10- and 100-year Floods	Variation
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot
7.1 to 12 feet	2.0 feet
More than 12 feet	3.0 feet

The locations of the reaches determined for the flooding sources of Pike County are shown on the Flood Profiles and are summarized in Table 4, Flood Insurance Zone Data.

5.2 Flood Hazard Factors

The Flood Hazard (FHF) is used to establish relationships between depth and frequency of flooding in any reach. This relationship is then used with depth-damage relationships for various classes of structures to establish actuarial insurance rate tables.

The FHF for a riverine reach is the average weighted difference between the 10- and 100-year flood water-surface elevations rounded to the nearest 0.5 foot, multiplied by 10, and shown as a 3-digit code. For example, if the difference between elevations is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference is greater than 10.0 feet, it is rounded to the nearest whole foot.

5.3 Flood Insurance Zones

Flood insurance zones and zone numbers are assigned based on the type of flood hazard and the FHF, respectively. A unique zone number is associated with each possible FHF and varies from 1 for a FHF of 005 to a maximum of 30 for a FHF of 200 or greater.

Zone A:	Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods; no base flood elevations are shown or FHFs determined.
Zones A2-A9, A11-A17, A19:	Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations are shown, and zones subdivided according to FHF.

Zone B:	Areas between the Special Flood Hazard Areas and the limits of the 500-year flood; areas that are protected from the 100- and 500-year floods by dike, levee, or other water control structure; or areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.
Zone C:	Areas of minimal flooding; not subdivided.

Flood elevation differences, FHFs, flood insurance zones, and base flood elevations for the flooding source studied in detail in the community are shown in Table 4, Flood Insurance Zone Data.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for Pike County is, for insurance purposes, the principal product of the Flood Insurance Study. This map contains the official delineation of flood insurance zones and base flood elevations. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. The base flood elevations and zone numbers are used by insurance agents, in conjunction with structure elevations and characteristics to assign actuarial insurance rates to structures and contents insured under the National Flood Insurance Program.

6.0 OTHER STUDIES

Section 90 of the Water Resources Development Act of 1974 authorized advance engineering and design studies for a comprehensive flood damage reduction program for the Tug Fork Valley in Kentucky, West Virginia, and Virginia (Reference 11). The survey, as carried out, took in portions of eight counties in three states: McDowell, Mingo, and Wayne Counties in West Virginia; Martin, Pike, and Lawrence Counties in Kentucky; and, Buchanan and Tazewell Counties in Virginia.

Findings of the study indicate that flood protection for Tug Fork Valley can be provided most effectively through an integrated program of local structural measures and evacuation and relocation of developments located in extremely hazardous areas.

Tentative plans include up to nine local protection projects for communities along Tug Fork, including Matewan and Williamson, as well as a major channel cutoff downstream of Matewan.

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (FEET NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
BURNING FORK							
REACH 1	0066	-1.7	-0.5	1.0	015	A3	VARIES—SEE MAP
TUG FORK							
REACH 1[4]	0030,0040,0045	-8.6	-2.1	5.6	085	A17	VARIES—SEE MAP
REACH 2[4]	0045,0101,0103	-7.0	-1.6	4.4	070	A14	VARIES—SEE MAP
REACH 3[4]	0103,0104	-5.9	-1.3	4.0	060	A12	VARIES—SEE MAP
REACH 4[4]	0104,0110,0120	-6.3	-1.8	4.5	065	A13	VARIES—SEE MAP

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT
[4] DATA FOR THIS REACH TAKEN FROM THE MINGO COUNTY, W.VA. FIS

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

BURNING FORK—TUG FORK

FLOODING SOURCE	PANEL	ELEVATION DIFFERENCE* BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION* (NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
RATLIFF CREEK							
REACH 1	0065,0068	2.2	0.8	1.1	020	A4	VARIES SEE MAP
REACH 2	0066,0068	1.2	0.5	0.8	010	A2	VARIES SEE MAP
SHELBY CREEK							
REACH 1	0135,0145	7.0	2.2	3.7	070	A14	VARIES SEE MAP
REACH 2	0145	5.5	1.5	3.0	055	A11	VARIES SEE MAP
REACH 3	0140,0145,0210	7.3	1.7	3.9	075	A15	VARIES SEE MAP
REACH 4	0210,0220	2.8	0.8	1.7	030	A6	VARIES SEE MAP
MARROWBONE CREEK							
REACH 1	0163,0164	2.7	0.7	1.9	025	A5	VARIES SEE MAP
REACH 2	0163,0226,0227,0228	2.2	0.6	1.2	020	A4	VARIES SEE MAP
JOHNS CREEK							
REACH 1	0075	4.2	1.2	2.6	040	A8	VARIES SEE MAP
RACCOON CREEK							
REACH 1	0066,0075	3.1	1.0	2.0	030	A6	VARIES SEE MAP

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

RATLIFF CREEK – SHELBY CREEK – MARROWBONE CREEK – JOHNS CREEK – RACCOON CREEK

FLOODING SOURCE	PANEL	ELEVATION DIFFERENCE[1] BETWEEN 1.0% (100 YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[2] (NGVD)
		10% (10 YEAR)	2% (50 YEAR)	0.2% (500 YEAR)			
BIG CREEK							
REACH 1	0030,0040	4.7	1.5	3.4	045	A9	VARIES – SEE MAP
REACH 2	0040	3.5	1.0	2.5	035	A7	VARIES – SEE MAP
POND CREEK							
REACH 1	0045,0085	3.6	0.9	2.1	035	A7	VARIES – SEE MAP
REACH 2	0085	2.7	0.8	1.5	025	A5	VARIES – SEE MAP
BLACKBERRY CREEK							
REACH 1	0085,0101	2.7	0.8	1.4	025	A5	VARIES – SEE MAP
PETER CREEK							
REACH 1	0103,0111	3.5	1.0	2.1	035	A7	VARIES – SEE MAP
RIGHT FORK PETER CREEK							
REACH 1	0111,0115	2.1	0.5	1.1	020	A4	VARIES – SEE MAP

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

BIG CREEK – POND CREEK –
BLACKBERRY CREEK – PETER CREEK – RIGHT FORK PETER CREEK

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
LEFT FORK PETER CREEK							
REACH 1	0111,0115,0200	-2.3	0.6	1.3	025	A5	VARIES - SEE MAP
ZEBULON TRIBUTARY							
REACH 1	0066	-1.1	0.3	0.6	010	A2	VARIES - SEE MAP
REACH 2	0066	-2.2	-0.4	0.9	020	A4	VARIES - SEE MAP
BRUSHY BRANCH							
REACH 1	0228	2.0	0.7	1.1	020	A4	VARIES - SEE MAP
REACH 2	0228	-1.7	-0.6	0.8	015	A3	VARIES - SEE MAP
ASHCAMP BRANCH							
REACH 1	0228,0229,0240	1.6	0.5	0.9	015	A3	VARIES - SEE MAP
LEVISA FORK							
REACH 1	0065,0075	12.5	3.8	10.5	130	A23	VARIES - SEE MAP
REACH 2	0065,0135	12.1	3.7	10.1	120	A22	VARIES - SEE MAP
REACH 3	0135	12.6	4.1	10.8	130	A23	VARIES - SEE MAP
REACH 4	0135	11.9	4.0	10.7	120	A22	VARIES - SEE MAP
REACH 5	0135,0165,0175	10.6	3.6	10.1	110	A21	VARIES - SEE MAP
RUSSELL FORK							
REACH 1	0065,0075	10.6	3.6	10.1	110	A21	VARIES - SEE MAP
REACH 2	0163,0164,0165	10.0	2.9	7.2	100	A20	VARIES - SEE MAP
REACH 3	0164	8.0	2.5	6.9	080	A16	VARIES - SEE MAP
REACH 4	0164,0235	6.9	2.0	5.0	070	A14	VARIES - SEE MAP
REACH 5	0235	6.0	1.6	4.5	060	A12	VARIES - SEE MAP

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

PIKE COUNTY, KY
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

LEFT FORK PETER CREEK—ZEBULON TRIBUTARY—
BRUSHY BRANCH—ASHCAMP BRANCH—LEVISA FORK—RUSSELL FORK

Type 19 Flood Insurance Studies have been prepared for the Cities of Coal Run and Pikeville, Pike County, Kentucky (References 12 and 13). These are in exact agreement with this study. Flood Insurance Studies are currently being prepared for Mingo County, West Virginia and Floyd County, Unincorporated Areas, Kentucky (References 9 and 14). Work has not progressed to a point where a comparison can be made with these studies. A Flood Insurance Study is currently being prepared for Martin County, Unincorporated Areas, Kentucky (Reference 15). This report is in agreement with that study.

A Type 15 Flood Insurance Study has been published for Pike County, Kentucky (Reference 16). The differences between the Type 15 and this Type 19 study are justified by the inclusion of more up-to-date information in this study.

7.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, Federal Emergency Management Agency, 1371 Peachtree Street, N.E., Suite 736, Atlanta, Georgia 30309.

8.0 REFERENCES AND BIBLIOGRAPHY

1. U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Number of Inhabitants, Kentucky, Washington, D.C., February 1982.

2. ————, National Oceanic and Atmospheric Administration, National Climatic Center, Climatological Data for Kentucky, 1980.

3. U.S. Army Corps of Engineers, Statistical Methods in Hydrology, Leo R. Beard, Sacramento, California, 1962.

4. U.S. Water Resources Council, Bulletin No. 17, Guidelines for Determining Flood Flow Frequency, March 1976.

5. ————, Flood Flow Frequency Analysis, Preliminary, October 1976.

6. U.S. Geological Survey, Surface Water Supply of the United States, 1913-1974.

7. U.S. Army Corps of Engineers, Huntington District, Surface Water Supply and Records, 1913-1976.

8. ————, Hydrologic Engineering Center, New HEC-2, Error 04, Modification 96, May 1981.

9. Federal Emergency Management Agency, Flood Insurance Study, Mingo County, Unincorporated Areas, West Virginia (in progress).

10. L. Robert Kimball, Inc., Aerial Photogrammetric Strip Mapping, Scale 1:2400, Contour Interval 5 feet, April 1982.

U.S. Army Corps of Engineers, Huntington District, Tug Fork Valley, Flood Damage Reduction Plan, West Virginia, Kentucky, Virginia, July 1981.

Federal Emergency Management Agency, Type 19 Flood Insurance Study, City of Coal Run, Pike County, Kentucky, September 1984.

13. ————, Type 19 Flood Insurance Study, City of Pikeville, Pike County, Kentucky, September 1984.

14. ————, Flood Insurance Study, Floyd County, Unincorporated Areas, Kentucky (in progress).

15. ————, Flood Insurance Study, Martin County, Unincorporated Areas, Kentucky (in progress).

16. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Type 15 Flood Insurance Study, Pike County, Unincorporated Areas, Kentucky, December 1979.

U.S. Water Resources Council, Flood Plain Management Guidelines for Implementing E.O. 11988, February 1978.

9.0 REVISIONS DESCRIPTION

This section has been added to provide information regarding significant revisions made since the original Flood Insurance Study was printed. Future revisions may be made that do not result in the republishing of the Flood Insurance Study report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood hazard data located at the Public Works Department, Pike County Courthouse, Main Street, Pikeville, Kentucky.

9.1 First Revision (Revised February 16, 1990)

a. Acknowledgments

The hydrologic and hydraulic analyses for this Revisions Description were performed by the U.S. Army Corps of Engineers (COE), Huntington District. The Federal Emergency Management Agency reviewed and accepted these data for purposes of this revision.

b. Scope

This Revision has been added as a result of revised discharges for Levisa and Russell Forks. The corporate limits for the City of Pikeville were also changed. Marrowbone, Ratliff, and Shelby Creeks were revised to reflect the new backwater elevations as a result of the restudy.

c. Hydrologic and Hydraulic Analyses

The hydrologic analyses were performed by the COE using procedures described in section 3.1 of this report and U.S. Geological Survey Bulletin No. 17B (Reference 17). However, additional years of stream gage records—from 1976 to 1985—were used, resulting in revised discharges. These discharges are given in Table 5, Revised Summary of Discharges.

TABLE 5 - REVISED SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQ MILES)	PEAK DISCHARGE (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
LEVISA FORK					
at new USGS gage at Pikeville	1,232	33,000	51,200	60,900	88,100
RUSSELL FORK					
at mouth	679	41,700	64,000	75,000	104,800
just upstream of Marrowbone Creek	643	40,500	62,300	72,500	102,500
just upstream of Elkhorn Creek	555	37,600	56,700	66,500	96,800

The HEC-2 step-backwater computer program (Reference 18) was used to compute floods of the selected recurrence intervals using the new discharges developed by the COE.

Roughness coefficients (Manning's "n") were revised on Levisa and Russell Forks. Revised roughness coefficients on Levisa Fork ranged from 0.035 to 0.057 for the channel and from 0.045 to 0.13 for the overbanks. Revised roughness coefficients on Russell Fork ranged from 0.05 to 0.08 for the overbanks. The channel "n" value on Russell Fork was not revised.

Revised flood boundaries along Levisa and Russell Forks were delineated using flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using topographic maps prepared by the COE (Reference 19).

d. Floodways

Floodway computations for Levisa and Russell Forks were revised as a result of revised discharges. The floodways were computed on the basis of equal conveyance reduction from each side of the floodplain. The results of these computations were tabulated at selected cross sections for each stream segment for which a floodway was revised and are presented in Table 3, Floodway Data.

e. Other Studies

The Flood Insurance Studies published for the Village of Coal Run (Reference 20), the City of Elkhorn City (Reference 21), and the City of Pikeville (Reference 22) are being revised in conjunction with this study and will be in agreement.

f. References and Bibliography

17. U.S. Department of the Interior, Geological Survey, Interagency Advisory Committee on Water Data, Office of Water Data Coordination, Hydrology Subcommittee, Bulletin No. 17B, Guidelines for Determining Flood Flow Frequency, September 1981, revised March 1982.

18. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Computer Program 723-X6-L202A, Davis, California, April 1984.

19. ————, Huntington District, Combined Flood Insurance Rate Map and Flood Boundary and Floodway Work Map, Scale 1:2400, Contour Interval 5 Feet: Pike County, Kentucky, September 1982.

20. Federal Emergency Management Agency, Flood Insurance Study, Village of Coal Run, Pike County, Kentucky, March 1984, revision in progress.

21. ————, Flood Insurance Study, City of Elkhorn City, Pike County, Kentucky, November 1985, revision in progress.

22. ----------, Flood Insurance Study, City of Pikeville, Pike County, Kentucky, March 1984, revision in progress.